

SV670P - Single-Axis Pulse Servo Drive

Performance, enhanced functionality, and flexibility

- User friendly installation
- Easy set-up and tuning
- CANopen (C) and CANlink (A) variants also available
- Safe Torque Off - SIL 3

CANlink **CANopen**



SV670P/C/A

Product family overview

Product variants:

SV670P - pulse control variant

Pulse interface for position control (4 MHz maximum input frequency).

SV670C - CANopen variant

Compliant with CiA 402 device profile (IEC 61800-7-201/301), supporting several operation modes.

SV670A - CANlink variant

Uses the Inovance proprietary protocol, in combination with Inovance controller products.

CANopen operation modes

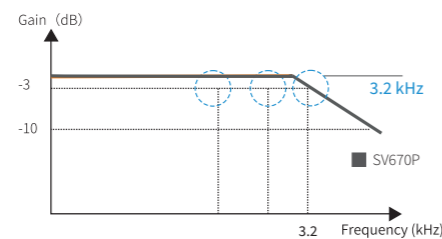
- Profile Position Mode (PP)
- Profile Velocity Mode (PV)
- Profile Torque Mode (PT)
- Homing Mode (HM)
- Interpolation Mode (IP)

Speed loop bandwidth*

A speed loop response bandwidth of 3.2 kHz gives significantly improved performance compared to the previous generation of Inovance products.

SV670	
Carrier frequency	12 kHz
Current loop cycle time	1.6 μs
Speed loop cycle time	62.5 μs
Position loop cycle time	62.5 μs

Speed loop response graph



*Please note: The phrase 'speed loop bandwidth' refers to the highest frequency speed command change that the servo system can respond to.

Control signals I/Os: 1x AI (12 bits), 1x AO, 8x DI, 5x DO

Built-in USB-C port (for PC connection) and RS485 port (Modbus RTU communication protocol)

Drive's control circuit can be supplied from the USB-C port, allowing an easy parameter upload/download and firmware upgrade, with no requirement to provide any additional power supply.

Position, speed, torque, compound control

- 16x multi-position registers for point-to-point and sequential motion
- Homing sequence
- Interrupt positioning
- Position comparison

Notch filter for mechanical resonance suppression

High resolution feedback encoder

23 bit serial single/multi-turn absolute encoder provides 8,388,608 pulses within one mechanical turn. Multi-turn absolute information can be also saved at power down, avoiding the need to perform machine homing at every power-up.

Functional safety – STO SIL3 EN/IEC 61800-5-2 compliant¹

The STO function guarantees safe machine stop without using additional contactors.

Short output winding

Standard, built-in, *short output winding* ensures safe braking if the drive is unexpectedly disabled – even in the case of a failure in the motor holding brake.



Robust and reliable – designed for harsh environments

Isolated cooling channel prevents dust contamination of internal electrical components. Conformally coated PCBs are resistant to 3S2 and 3C3 environments (acc. to IEC 60721-3-3), providing further protection.

Enhanced functionality

Second encoder input (incremental quadrature type, differential signals) for full closed loop operation. Segregated control supply AC input in all ratings.

Easy installation and fast commissioning

Pluggable connectors for both signal and power allow avoidance of wiring mistakes. Fine tuning is possible using the STune and ETune software functions, which are both designed for use in applications with small load inertia changes:

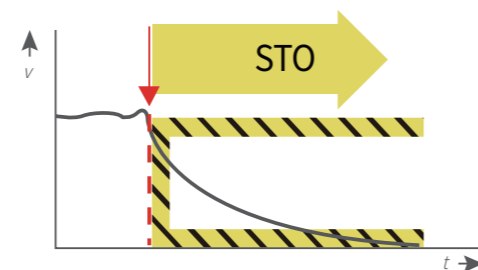
- STune obtains the gains using a calculation based on the set stiffness level
- ETune automatically adjusts the optimal gain parameters of the servo drive to deliver the best performance

Easy cloning of drive parameters

Parameters of all SV670 drives in a machine can be cloned in one go using the commissioning software.

Guided PC commissioning with advanced software wizard

- Graphical user interface means specialist skills not needed for commissioning
- Software included free of charge
- Connect to a PC using standard USB-C cable



CANopen



SV670P/C/A Selection Chart

Power supply voltage	Motor base speed (RPM)	Motor max speed (RPM)	Motor power (W)	Motor rated torque (N·m)	Motor peak torque (N·m)	Motor frame size (mm)	Rotor inertia (0.0001x kg·m ²)	SV670 current (rated)	SV670 current (peak)	MS1 motor type	SV670x type Where "x" can be the P (pulse), C (CANopen) or A (CANlink) variants	Size	Dimensions H x W x D (mm)	Motor mass (kg)	Drive mass (kg)	Connector kit
1PH 220 V	3000	6000	50	0.16	0.56	40X40	0.026	1.6	5.80	MS1H1-05B30CB-A330Z	SV670xS1R6I-FS(-INT)	A	170X45.5X150	0.5	1.13	S6-C22
	3000	6000	100	0.32	1.12	40X40	0.041	1.6	5.80	MS1H1-10B30CB-A330Z	SV670xS1R6I-FS(-INT)	A	170X45.5X150	0.5	1.13	S6-C22
	3000	6000	200	0.64	2.24	60X60	0.207	1.6	5.80	MS1H1-20B30CB-A331Z	SV670xS1R6I-FS(-INT)	A	170X45.5X150	1	1.13	S6-C22
	3000	6000	400	1.27	4.46	60X60	0.376	2.8	10.10	MS1H1-40B30CB-A331Z	SV670xS2R8I-FS(-INT)	A	170X45.5X150	1	1.13	S6-C22
	3000	6000	400	1.27	4.46	60X60	0.657	2.8	10.10	MS1H4-40B30CB-A331Z	SV670xS2R8I-FS(-INT)	A	170X45.5X150	1.5	1.13	S6-C22
	3000	6000	550	1.75	6.13	80X80	1.06	5.5	16.90	MS1H1-55B30CB-A331Z*	SV670xS5R5I-FS(-INT)	C	170X55X173	2	1.5	S6-C22
	3000	6000	750	2.39	8.36	80X80	1.38	5.5	16.90	MS1H1-75B30CB-A331Z	SV670xS5R5I-FS(-INT)	C	170X55X173	2.5	1.5	S6-C22
	3000	6000	750	2.39	8.36	80X80	2	5.5	16.90	MS1H4-75B30CB-A331Z	SV670xS5R5I-FS(-INT)	C	170X55X173	2.5	1.5	S6-C22
1/3 PH 220 V	1500	3000	850	5.39	13.50	130X130	13.3	7.6	23.00	MS1H3-85B15CB-A331Z	SV670xS7R6I-FS(-INT)	C	170X55X173	6.7	1.5	S6-C29
	3000	6000	1000	3.18	9.12	80X80	1.75	7.6	23.00	MS1H1-10C30CB-A331Z*	SV670xS7R6I-FS(-INT)	C	170X55X173	3	1.5	S6-C22
	3000	6000	1000	3.18	11.10	80X80	1.75	11.6	32.00	MS1H1-10C30CB-A331Z*	SV670xS012I-FS(-INT)	D	170X80X183	3	2	S6-C22
	3000	6000	1000	3.18	9.54	100X100	1.87	7.6	23.00	MS1H2-10C30CB-A331Z	SV670xS7R6I-FS(-INT)	C	170X55X173	5.6	1.5	S6-C29
	1500	3000	1300	8.34	20.85	130X130	17.8	11.6	32.00	MS1H3-13C15CB-A331Z	SV670xS012I-FS(-INT)	D	170X80X183	8.15	2	S6-C29
	3000	5000	1500	4.9	14.70	100X100	2.46	11.6	32.00	MS1H2-15C30CB-A331Z	SV670xS012I-FS(-INT)	D	170X80X183	6.8	2	S6-C29
3 PH 220 V	3000	6000	2000	6.36	19.10	100x100	2.92	18.0	45.00	MS1H2-20C30CB-A331R	SV670xS018I-FS(-INT)	E	250x90x230	8.00	3.94	S6-C29
	3000	6000	3000	7.96	23.90	100x100	3.49	22.0	55.00	MS1H2-25C30CB-A331R	SV670xS022I-FS(-INT)	E	250x90x230	9.10	3.94	S6-C29
	3000	6000	3000	9.8	29.40	130x130	6.4	22.0	55.00	MS1H2-30C30CB-A331R	SV670xS022I-FS(-INT)	E	250x90x230	11.60	3.94	S6-C29
	3000	6000	4000	12.6	37.80	130x130	9	27.0	67.50	MS1H2-40C30CB-A331R	SV670xS027I-FS(-INT)	E	250x90x230	16.60	3.94	S6-C29
	3000	6000	5000	15.8	47.40	130x130	11.6	27.0	67.50	MS1H2-50C30CB-A331R	SV670xS027I-FS(-INT)	E	250x90x230	18.80	3.94	S6-C29
	1500	4500	1800	11.5	28.75	130x130	24.9	18.0	45.00	MS1H3-18C15CB-A331R	SV670xS018I-FS(-INT)	E	250x90x230	8.50	3.94	S6-C29
	1500	4500	2900	18.6	46.50	180x180	44.7	22.0	55.00	MS1H3-29C15CB-A331R	SV670xS022I-FS(-INT)	E	250x90x230	13.80	3.94	S6-C39
	1500	4500	4400	28.4	71.10	180x180	64.9	27.0	67.50	MS1H3-44C15CB-A331R	SV670xS027I-FS(-INT)	E	250x90x230	17.40	3.94	S6-C39
	3000	6000	1000	3.18	9.54	100X100	1.87	5.4	14.00	MS1H2-10C30CD-A331Z	SV670xT5R4I-FS(-INT)	C	170X55X173	5.65	1.5	S6-C29
	3000	5000	1500	4.9	14.70	100X100	2.46	5.4	14.00	MS1H2-15C30CD-A331Z	SV670xT5R4I-FS(-INT)	C	170X55X173	6.7	1.5	S6-C29
3 PH 400 V	3000	5000	2000	6.36	19.10	100X100	3.06	8.4	20.00	MS1H2-20C30CD-A331Z	SV670xT8R4I-FS(-INT)	D	170X80X183	8.1	2	S6-C29
	3000	5000	2500	7.96	19.12	100X100	3.65	8.4	20.00	MS1H2-25C30CD-A331Z	SV670xT8R4I-FS(-INT)	D	170X80X183	9.1	2	S6-C29
	3000	5000	2500	7.96	23.90	100X100	3.65	11.9	29.75	MS1H2-25C30CD-A331Z	SV670xT012I-FS(-INT)	D	170X80X183	9.1	2	S6-C29
	3000	5000	3000	9.8	29.16	130X130	7.72	11.9	29.75	MS1H2-30C30CD-A331Z	SV670xT012I-FS(-INT)	D	170X80X183	11.6	2	S6-C29
	3000	5000	3000	9.8	29.40	130X130	7.72	16.5	41.25	MS1H2-30C30CD-A331Z	SV670xT017I-FS(-INT)	E	250X90X230	11.6	3.94	S6-C29
	3000	5000	4000	12.6	37.80	130X130	12.1	16.5	41.25	MS1H2-40C30CD-A331Z	SV670xT017I-FS(-INT)	E	250X90X230	16.6	3.94	S6-C29
	3000	5000	5000	15.8	40.91	130X130	15.4	16.5	41.25	MS1H2-50C30CD-A331Z	SV670xT017I-FS(-INT)	E	250X90X230	18.8	3.94	S6-C29
	3000	5000	5000	15.8	47.60	130X130	15.4	20.8	52.12	MS1H2-50C30CD-A331Z	SV670xT021I-FS(-INT)	E	250X90X230	18.8	3.94	S6-C29
	1500	3000	850	5.39	13.50	130X130	13.3	3.5	11.00	MS1H3-85B15CD-A331Z	SV670xT3R5I-FS(-INT)	C	170X55X173	6.7	1.5	S6-C29
	1500	3000	1300	8.34	20.85	130X130	17.8	5.4	14.00	MS1H3-13C15CD-A331Z	SV670xT5R4I-FS(-INT)	C	170X55X173	8.2	1.5	S6-C29
	1500	3000	1800	11.5	28.75	130X130	25	8.4	20.00	MS1H3-18C15CD-A331Z	SV670xT8R4I-FS(-INT)	D	170X80X183	9.55	2	S6-C29
	1500	3000	2900	18.6	37.20	180X180	55	11.9	29.75	MS1H3-29C15CD-A331Z	SV670xT012I-FS(-INT)	D	170X80X183	16.6	2	S6-C39
	1500	3000	4400	28.4	71.10	180X180	88.9	16.5	41.25	MS1H3-44C15CD-A331Z	SV670xT017I-FS(-INT)	E	250X90X230	21.25	3.94	S6-C39
	1500	3000	5500	35	87.60	180X180	107	20.8	52.12	MS1H3-55C15CD-A331Z	SV670xT021I-FS(-INT)	E	250X90X230	26.8	3.94	S6-C39
	1500	3000	7500	48	117.63	180X180	141	25.7	64.25	MS1H3-75C15CD-A331Z	SV670xT026I-FS(-INT)	E	250X90X230	35.2	3.94	S6-C39

*Brake option not available.
All MS1 motors are CE certified and UL listed.
For detailed motor dimension data please contact your local Inovance representative or refer to the MS1 motors brochure.



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